

## ABSTRACT

The present invention provides a method for reducing undesirable light emission from a sample using at least one photon producing agent and at least one photon reducing agent (e.g. dye-based photon reducing agents). The present invention further provides a method for reducing undesirable light emission from a sample (e.g., a biochemical or cellular sample) with at least one photon producing agent and at least one collisional quencher. The present invention also provides a method for reducing undesirable light emission from a sample (e.g., a biochemical or cellular sample) with at least one photon producing agent and at least one quencher, such as an electronic quencher. The present invention also provides a system and method of screening test chemicals in fluorescent assays using photon reducing agents. The present invention also provides compositions, pharmaceutical compositions, and kits for practicing these methods.